ECM-MS907

SERVICE MANUAL

Ver 1.2 2001. 06
With CORRECTION-1
(9-923-074-91)

US Model
Canadian Model
AEP Model
E Model

SPECIFICATIONS

General

Type	One-point stereo (employing the Mid-side stereo system), electret condenser microphone
Microphone cord	3 mm dia. two core-shielded, OFC (Oxygen-free copper) cord with the gold-plated L-shaped stereo miniplug
	Length: Approx. 1.5 m (59 1/8 inches)
Stand screw	PF 1/2 screw
Dimensions	29 x 127 mm (Outside diameter x length) (1 3/16 x 5 inches) not incl. projecting parts and controls
Mass	Approx. 110 g (4 oz) including battery
Supplied accessories	Wind screen (1)
	Microphone holder (also used as a microphone stand) (1)
	Carrying case (1)

Performance

Frequency response	100 – 15,000 Hz
Directivity	Unidirectional x 2 (Directive angle: 90° or 120°) (switchable)
Output impedance	1 kilohm ±20% unbalanced
Sensitivity (directive angle 120°)	
	Open circuit output voltage*1: –45 ±4 dB
	Effective output level*2: –51 ±4 dBm
	Difference between L and R channel sensitivity: Less than 3 dB
Power requirements	Normal operating voltage: 1.5 V, R6 (size AA) battery
	Battery life: Approx. 200 hours with a Sony R6P (SR) battery
Maximum sound pressure level*3	
	More than 110 dBSPL
Dynamic range	More than 85 dB
Operating temperature range	
	0°C to 40°C (32°F to 104°F)

***1** 0 dB = 1 v/Pa, 1,000 Hz (1 Pa = 10 µbar = 94 dBSPL)
***2** 0 dBm = 1 mW/Pa, 1,000 Hz
***3** 1 % wave distortion is present at 1,000 Hz.
(0 dBSPL = 2 x 10^{-5} Pa)

Design and specifications are subject to change without notice.

ELECTRET CONDENSER STEREO MICROPHONE

9-923-074-12
2001F0200-1

Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

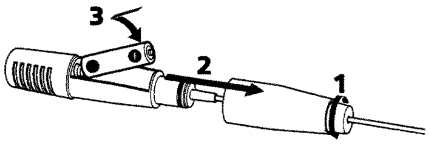
SONY®

SECTION 1
GENERAL

This section is extracted from instruction manual.

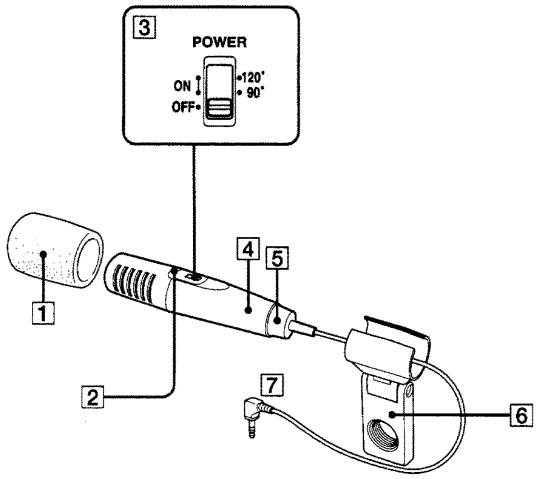
English

A

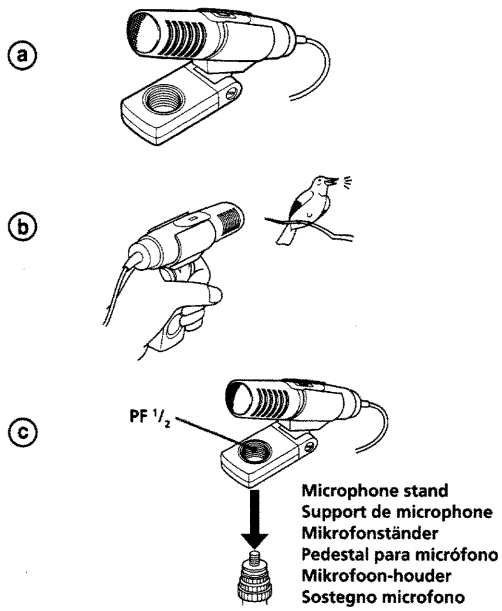


B

C



D



Installing the battery (See fig. A)

1 Turn the cap counterclockwise.
2 Pull out the grip to open the battery compartment.
3 Insert a R6 (size AA) battery.
Be sure to match the ⊕ and ⊖ on the battery with the ⊕ and ⊖ on the battery compartment.

Battery life

When the power is turned on, the battery check indicator lights momentarily. When the battery becomes weak, the indicator remains dimly lit or does not light at all. In this case, replace the battery with a new one. Sony R6P (SR) manganese battery gives continuous operation of the microphone for about 200 hours.

Notes on battery

To avoid damage to the unit caused by battery leakage and corrosion;
- Install the battery with correct polarity.
- Do not try to recharge the battery.
- Remove the battery if the microphone is not to be used for a long period of time.
In case of battery leakage, wipe off any deposit in the battery compartment before installing a new battery.

Connection (see fig. B)

Connect the L-shaped stereo miniplug to the MIC jack of your recording equipment (MD, DAT, etc.) as illustrated in fig. B.

Parts Identification and Uses (see fig. C)

1 **Wind screen**
Attach to reduce wind or breathing noise.

2 **Battery check indicator**
When the power/directive angle switch is turned from OFF to ON, this indicator lights momentarily. When the battery becomes weak, the indicator remains dimly lit or does not light at all. In this case, replace the battery with a new one.

3 **Power/directive angle switch**
Set the switch according to the sound source.

OFF	Turns power off.
ON	Turns power on.
90°	Use to pick up a relatively distant, wider sound source (orchestra, chorus, stage play, etc.), to provide a clear stereo sound image focused on target source.
120°	Use to pick up a relatively near, narrower sound source (instrumental solo, conversation, etc.), to provide a natural stereo sound image with full reality.

The above gives guidelines for selecting an appropriate angle. Although following these guidelines is encouraged, you can freely select either angle according to your own preference.

4 **Grip**

5 **Cap**

6 **Microphone holder (see fig. D)**

7 **L-shaped stereo miniplug**
Connect to the MIC jack of your recording equipment (MD, DAT, etc.).

Using the microphone holder (see fig. D)

ⓐ To stand the microphone on a flat surface
ⓑ To use as a hand microphone
ⓒ To attach the microphone to the microphone stand

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

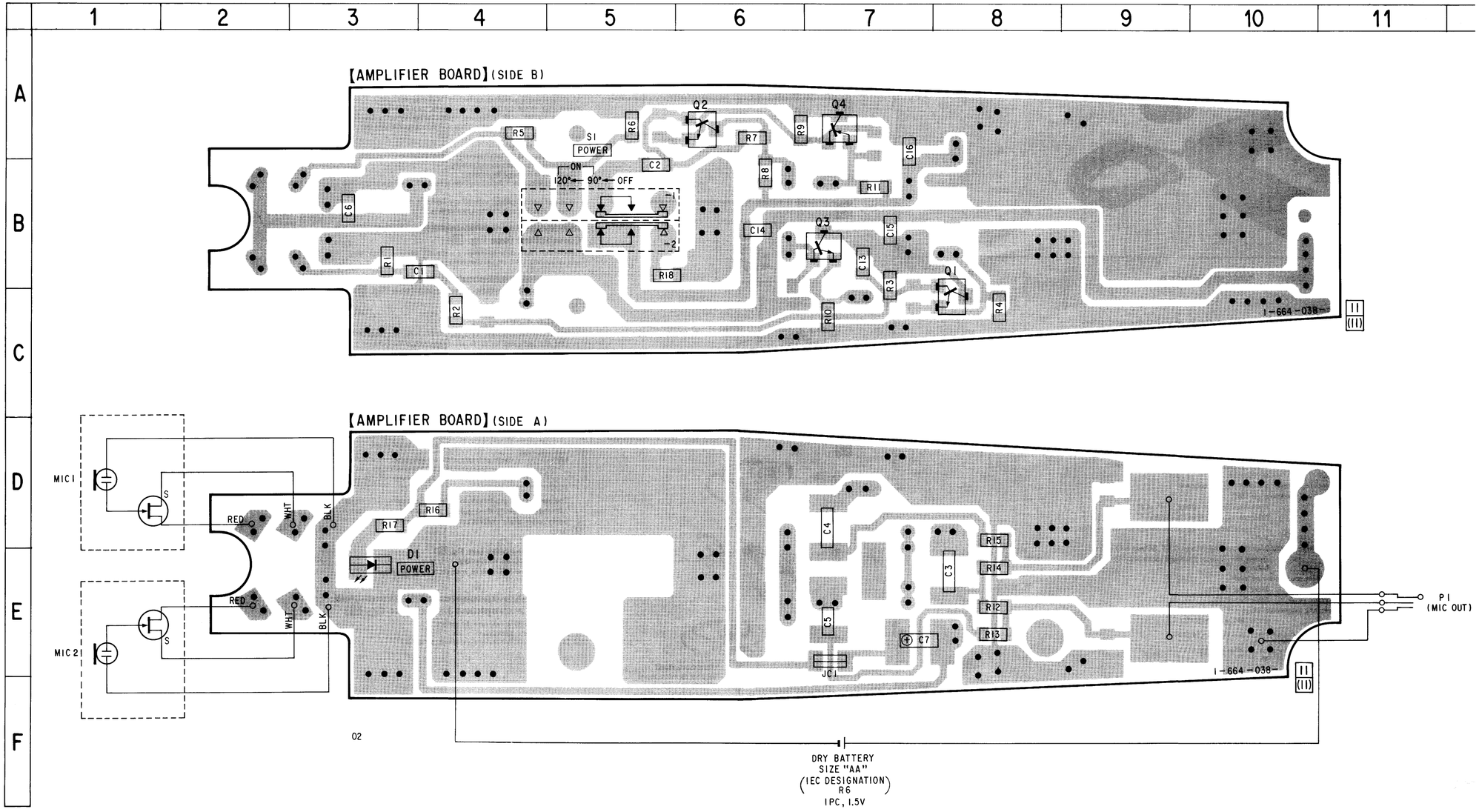
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 3
DIAGRAMS

3-1. PRINTED WIRING BOARDS

- **SEMICONDUCTOR LOCATION**

Ref. No.	Location
D1	E-3
Q1	C-8
Q2	A-6
Q3	B-7
Q4	A-7



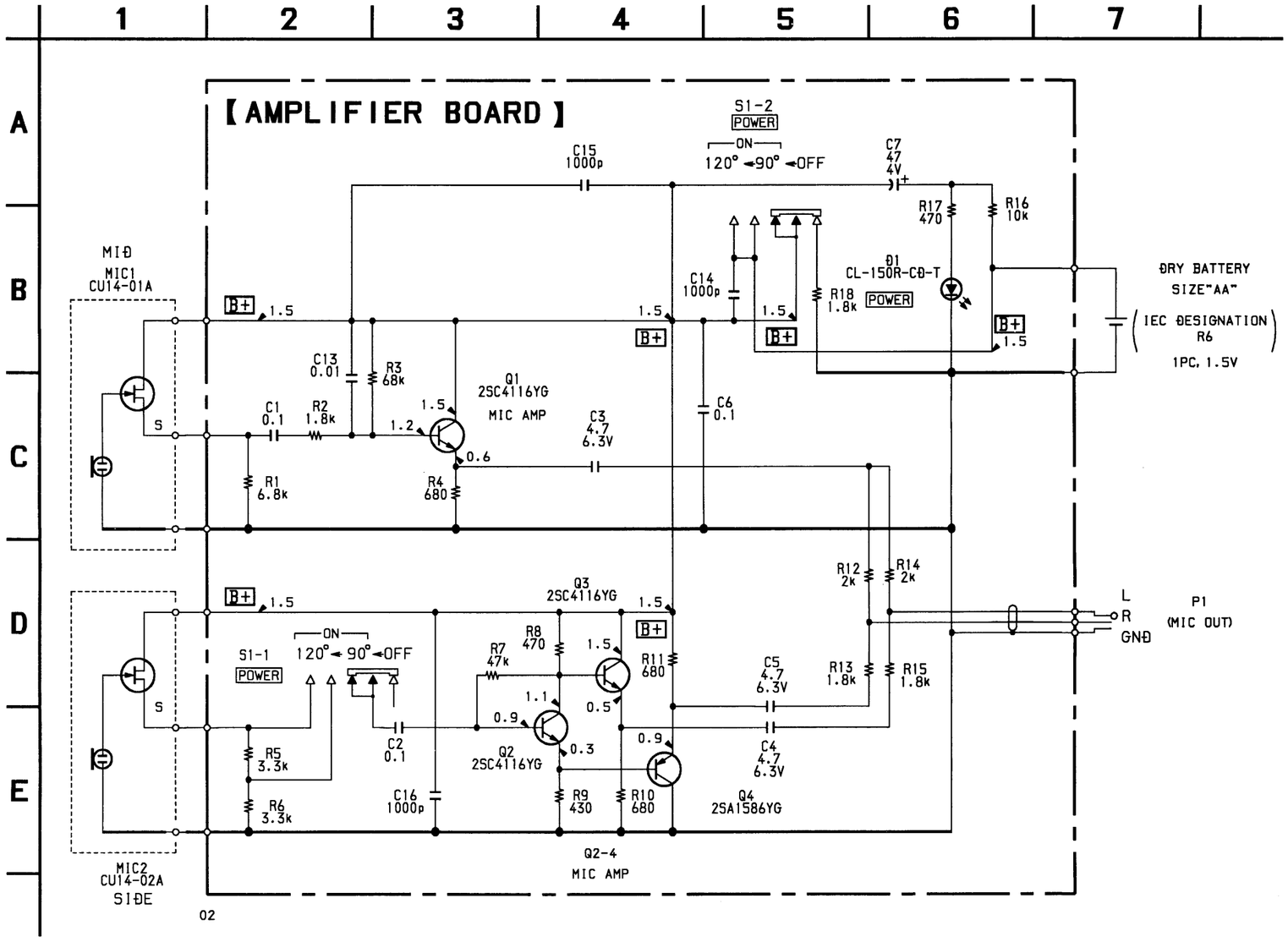
Note:

- ○— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)

Caution :

Pattern face side : (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side : (Component side) Parts on the parts face side seen from the parts face are indicated.

3-2. SCHEMATIC DIAGRAM



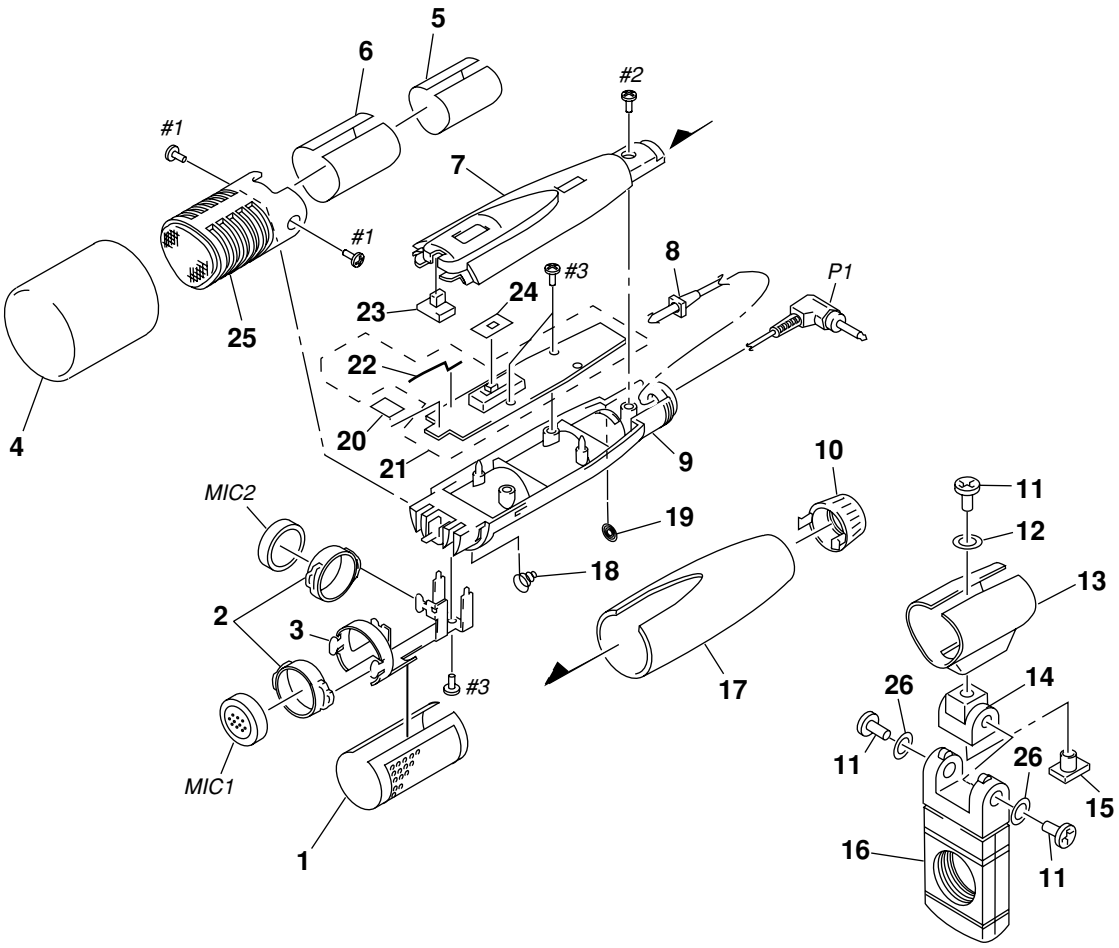
Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 1.5V and fed with regulated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

SECTION 4
EXPLODED VIEW

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remark
1	2-545-022-01	COVER, SHIELD	
2	2-542-250-01	SUSPENDER	
3	2-545-021-01	BRACKET, MICROPHONE HOLDING	
4	2-545-045-01	SCREEN, WINDOW	
5	2-545-020-01	SCREEN, SIDE	
6	2-545-018-01	NET, SIDE	
7	2-545-025-01	COVER, SWITCH	
* 8	2-135-236-01	BUSHING	
9	2-545-024-01	CHASSIS	
10	2-545-027-01	CAP	
11	2-532-252-01	SCREW, HOLDER	
12	3-701-442-01	WASHER, POLYETHYLENE	
13	2-545-028-01	HOLDER	
14	2-532-251-01	JOINT	
15	2-532-261-01	NUT, JOINT	

Ref. No.	Part No.	Description	Remark
16	X-2542-139-1	GRIP ASSY, HOLDER	
17	2-545-023-01	GRIP	
18	2-544-798-01	TERMINAL, MINUS	
19	2-544-797-01	TERMINAL, PLUS	
20	3-831-441-01	CUSHION	
* 21	A-4542-426-A	AMPLIFIER BOARD, COMPLETE	
22	2-532-245-01	SPRING	
23	2-545-030-01	WINDOW, LED	
24	3-007-144-01	SHEET, BLIND	
25	X-2542-137-1	MIC CASE ASSY	
26	3-701-442-21	WASHER, 4.5	
MIC1	8-814-271-00	MICROPHONE, BUILT-IN CU14-01A	
MIC2	8-814-271-10	MICROPHONE, BUILT-IN CU14-02A	
P1	1-790-508-11	CORD, MICROPHONE (2 CORE) (MIC OUT)	

SECTION 5
ELECTRICAL PARTS LIST

AMPLIFIER

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ , for example :
  uA.... : µ A.... , uPA.... : µ PA....
  uPB.... : µ PB.... , uPC.... : µ PC....
  uPD.... : µ PD....
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-4542-426-A	AMPLIFIER BOARD, COMPLETE			
		**********			
	2-532-245-01	SPRING			
		< CAPACITOR >			
C1	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C2	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C3	1-128-309-11	ELECT	4.7uF	20%	6.3V
C4	1-128-309-11	ELECT	4.7uF	20%	6.3V
C5	1-128-309-11	ELECT	4.7uF	20%	6.3V
C6	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C7	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C13	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C14	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C15	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C16	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< DIODE >			
D1	8-719-989-22	LED CL-150R-CD (POWER)			
		< JUMPER RESISTOR >			
JC1	1-216-295-00	METAL, CHIP	0	5%	1/10W
		< TRANSISTOR >			
Q1	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q2	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q3	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q4	8-729-230-60	TRANSISTOR 2SA1586-YG			
		< RESISTOR >			
R1	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R2	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R3	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4	1-216-819-11	METAL CHIP	680	5%	1/16W
R5	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R6	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R7	1-216-841-11	METAL CHIP	47K	5%	1/16W
R8	1-216-817-11	METAL CHIP	470	5%	1/16W
R9	1-218-482-11	METAL GLAZE	430	5%	1/16W
R10	1-216-819-11	METAL CHIP	680	5%	1/16W
R11	1-216-819-11	METAL CHIP	680	5%	1/16W
R12	1-218-271-11	METAL GLAZE	2K	5%	1/16W
R13	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R14	1-218-271-11	METAL GLAZE	2K	5%	1/16W
R15	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R16	1-216-833-11	METAL CHIP	10K	5%	1/16W
R17	1-216-817-11	METAL CHIP	470	5%	1/16W
R18	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
		< SWITCH >			
S1	1-762-894-11	SWITCH, SLIDE (POWER)			
**********					
		MISCELLANEOUS			
		**********			
MIC1	8-814-271-00	MICROPHONE, BUILT-IN CU14-01A			
MIC2	8-814-271-10	MICROPHONE, BUILT-IN CU14-02A			
P1	1-790-508-11	CORD, MICROPHONE (2 CORE) (MIC OUT)			
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		ACCESSORIES & PACKING MATERIALS			
		**********			
	2-545-083-01	PORCH, CARRYING			
	3-858-569-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,SPANISH,DUTCH,ITALIAN)			
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		**********			
		HARDWARE LIST			
		**********			
#1	7-685-203-19	SCREW +RK 2X5 (TYPE 2)			
#2	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT			
#3	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT			